



DEPARTMENT OF ENERGY

Activation Energy: DOE's National Laboratories as Catalysts of Regional Innovation

AGENCY: Office of Science, Office of Technology Transitions, Department of Energy.

ACTION: Request for information (RFI).

SUMMARY: The Department of Energy (DOE) Office of Science and the Office of Technology Transitions invite interested parties to provide input on place-based innovation opportunities that support the DOE mission.

DATES: Responses to this RFI must be received by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*].

ADDRESSES: DOE is using the *www.regulations.gov* system for the submission and posting of public comments in this proceeding. All comments in response to this RFI are therefore to be submitted electronically through *www.regulations.gov*, via the web form accessed by following the “Submit a Formal Comment” link near the top right of the *Federal Register* webpage for this document.

FOR FURTHER INFORMATION CONTACT: Requests for additional information may be submitted to Charles Russomanno, *Charles.Russomanno@hq.doe.gov*, (202) 378-7815, Susannah Howieson, *Susannah.Howieson@science.gov*, (202) 586-5121, Erik Hadland, *Erik.Hadland@science.doe.gov*, (240) 425-8125, or Margaux Murali, *Margaux.Murali@hq.doe.gov*, (202) 586-3698.

SUPPLEMENTARY INFORMATION:

Motivation

DOE is exploring opportunities to strengthen place-based innovation activities leveraging the DOE National Laboratories and Sites.¹

Background

Federally funded research and development (R&D) has catalyzed innovation that has driven economic growth in the form of new businesses, more jobs, increased wages, higher standards of living, and environmental sustainability. However, growth has been primarily localized in certain United States (U.S.) metropolitan regions that have become flourishing innovation ecosystems,² Elements of a thriving innovation ecosystem include, but are not limited to:³

- *Talent*: An educated and skilled workforce, as well as training programs to create and sustain this talent.
- *Infrastructure*: For research, commercial, industrial, and residential purposes—inclusive of physical spaces/facilities, utilities, transportation (including quality roadways and ready access to airports), and other features required for residential, industrial, and commercial purposes.

¹ DOE Laboratories and sites are Ames Laboratory, Argonne National Laboratory, Bettis and Knolls Atomic Power Laboratories, Brookhaven National Laboratory, Fermi National Accelerator Kansas City National Security Campus, Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, National Energy Technology Laboratory and Albany Research Center, National Renewable Energy Laboratory, Nevada National Security Site, Oak Ridge National Laboratory, Pacific Northwest National Laboratory, Pantex Plant, Princeton Plasma Physics Laboratory, Savannah River National Laboratory, Sandia National Laboratory, SLAC National Accelerator Laboratory, Thomas Jefferson National Accelerator Facility, and Y-12 National Security Complex.

² Gruber, J., & Johnson, S. (2019). Jump-starting America: How breakthrough science can revive economic growth and the American dream; Atkinson, R., Muro, M., & Whiton, J. (2019). The Case for Growth Centers. The Brookings Institution & Information Technology and Innovation Foundation.

³ Kauffman F Bell-Masterson, Jordan and Stangler, Dane, Measuring an Entrepreneurial Ecosystem (March 2015). Available at SSRN: <https://ssrn.com/abstract=2580336> or <http://dx.doi.org/10.2139/ssrn.2580336>; Evolution of the Industrial Innovation Ecosystem of Resource-Based Cities (RBCs): A Case Study of Shanxi Province, China, Jun Yao, Huajing Li 1, *, Di Shang and Luyang Ding, 2021., <https://www.mdpi.com/2071-1050/13/20/11350/pdf>; MIT's Stakeholder Framework for Building and Accelerating Innovation Ecosystems, Budden, P, Murray, F., 2019, https://innovation.mit.edu/assets/MIT-Stakeholder-Framework_Innovation-Ecosystems.pdf; An MIT Framework for Innovation Ecosystem Policy, Budden, P, Murray, F, 2018, https://innovation.mit.edu/assets/Framework-Ecosystem-Policy_Oct18.pdf; Kauffman Foundation, Universities and Entrepreneurial Ecosystems, https://www.kauffmanfellows.org/journal_posts/universities-and-entrepreneurial-ecosystems-standford-silicon-valley-success; “What are the key components of an entrepreneurial ecosystem in a developing economy? A longitudinal empirical study on technology business incubators in China”, Xiangfei Yuana, Haijing Haob, Chenghua Guan, Alex Pentland, <https://arxiv.org/pdf/2103.08131>.

- *Technology*: Accessible scientific and technical knowledge throughout the research, development, demonstration, and deployment (RDD&D) continuum for commercialization and manufacturing.
- *Capital*: Access to financial resources (*i.e.*, venture capital, private equity, angel investors, etc.) and technical resources (*i.e.*, scientific and manufacturing equipment).
- *Social Capital*: Local networking to incentivize and support the existence, development, and growth of innovation programs and companies.
- *Policy*: Local and regional policies and incentives that support innovation-driven enterprises, economic development, and planning within a regional innovation center.
- *Collaboration with Industry*: Mutually beneficial partnerships between public and private sectors to facilitate the exchange of knowledge, accelerate the commercialization of technologies, promote workforce development, and increase awareness of promising research, as well as provide directions for new research needs.
- *Community*: Structure that supports the development, accessibility, inclusivity, environmental sustainability, and engagement with the local community in an equitable way.

Place-based innovation initiatives can be used to cultivate innovation ecosystems in regions that have yet to realize benefits from the innovation renaissance of the past few decades. Building on existing research institutions, industrial infrastructure, concentrations of workforce skills, and connections to regional philanthropic and other civil society institutions, DOE can contribute to supporting localized economic growth models which will promote new regional innovation ecosystems. DOE seeks to stimulate innovation in regions surrounding the National Laboratories and Sites by:

- Providing key RDD&D to accelerate commercialization of breakthrough technologies;

- Driving development in the industrial and technology sectors of the future, such as innovations in advanced manufacturing, and supply chains, among others;
- Fostering sustainable and equitable economic growth in underinvested regions of the U.S.;
- Creating long-term high paying jobs in existing and new industries;
- Facilitating engagement and partnership with local and regional communities adjacent to DOE Laboratories and Sites; and
- Training and educating both the current and future diverse, equitable, and inclusive workforce.

Innovation ecosystems anchored around DOE National Laboratories and Sites will directly support DOE’s missions, including advancing new and emerging clean energy technologies, combatting the effects of climate change, developing technologies to support our nation’s security, cleaning up of legacy nuclear waste, and developing a technically skilled workforce.

Purpose

DOE is seeking input from all stakeholders about opportunities for place-based innovation activities that leverage research institutions—particularly the National Laboratories and Sites—to catalyze innovation ecosystems, contribute to DOE’s mission in energy, environment, and national security and ensure our nation’s vibrant economic future. The information received in response to this RFI will inform, and be considered by, the DOE in program planning and development. This is solely a request for information and not a Funding Opportunity Announcement (FOA), prize, or other solicitation.

Request for Responses

The objective of this RFI is to identify both opportunities and challenges for developing place-based innovation ecosystems anchored by DOE National Laboratories and Sites. DOE is

interested in hearing about potential new activities, as well as ongoing activities that would benefit from additional support. Information related, but not limited, to the following questions is requested:

Part A – Regional Characteristics

- What makes your region competitive or unique for innovation?
- What are your region's top three areas of technical expertise or attributes that are relevant to DOE's missions?
- What untapped potential exists in your region?
- What are the top three barriers to maximizing/growing your region's innovation ecosystem?
- What key areas of investment could be leveraged to realize untapped opportunities in your region?

Part B – Place-based Innovation Activity

B.1: Existing Activities: Describe the existing place-based innovation activity in your region.

- How does the activity connect to the immediate region or other specific location?
- How does your activity engage with local/regional partners (e.g., Federal laboratories, industry, academia, financing/investment, community organizations, local and tribal governments, etc.)?
- Are there any DOE National Laboratories or Sites currently involved? If so, how?
- How does the activity contribute to one or more of the aforementioned key elements of an innovation ecosystem?
- How does the activity foster belonging, accessibility, justice, equity, diversity, and inclusion?
- What are the challenges for existing innovation activities in your region?
- How was this innovation activity initiated/funded?

B.2: Potential Activities: Describe potential new or expanded place-based innovation activities in your region.

- How would the new or expanded activity connect to the immediate region or other specific location?
- How would your new or expanded activity engage with local/regional partners (e.g., Federal laboratories, industry, academia, funding/investment, community organizations, local and tribal governments, etc.)?
- How would the new or expanded activity contribute to one or more of the aforementioned key elements of an innovation ecosystem?
- How would the new or expanded activity foster belonging, accessibility, justice, equity, diversity, and inclusion?
- What are the potential benefits of the new or expanded activity for your region?
- What are the potential challenges for new innovation activities in your region?
- What level of support would be required to facilitate the new or expanded activity?
- What are potential sources of support for this expanded or new activity?

Confidential Business Information. Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email two well-marked copies: one copy of the document marked “confidential” including all the information believed to be confidential, and one copy of the document marked “non-confidential” with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

Signing Authority

This document of the Department of Energy was signed on November 10, 2022, by Dr.

Geraldine L. Richmond, Under Secretary for Science and Innovation, pursuant to delegated authority from the Secretary of Energy. The document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the *Federal Register*.

Signed in Washington, DC, on January 20, 2023.

Treena V. Garrett,

Federal Register Liaison Officer,

U.S. Department of Energy.

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